

PATENT COOPERATION TREATY

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PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year) **1 October 2004 (01.10.2004)**

Applicant's or agent's file reference
FP04032

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/KR 2004/001261

International filing date (day/month/year)
28 May 2004 (28.05.2004)

Priority Date (day/month/year)
30 May 2003 (30.05.2003)

International Patent Classification (IPC) or both national classification and IPC
H04L 29/06

Applicant

LG ELECTRONICS INC.

1. This opinion contains indications relating to the following items:

- ☒ Cont. No. I Basis of the opinion
- ☐ Cont. No. II Priority
- ☐ Cont. No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Cont. No. IV Lack of unity of invention
- ☒ Cont. No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Cont. No. VI Certain documents cited
- ☐ Cont. No. VII Certain defects in the international application
- ☐ Cont. No. VIII Certain observations on the international application

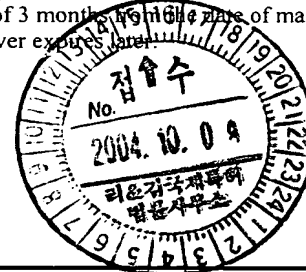
2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.



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Continuation No. I

IAP13 Rec'd PCT/PTO 12 DEC 2005

Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed.

Continuation No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims ----	YES
	Claims 1-22	NO
Inventive step (IS)	Claims ----	YES
	Claims 1-22	NO
Industrial applicability (IA)	Claims 1-22	YES
	Claims ----	NO

2. Citations and explanations:

Cited Documents:

D1: Koon-Seok Lee, Hoan-Jong Choi, Chang-Ho Kim, Seung-Myun Baek, 'A new control protocol for home appliances-LnCP.' In: International Symposium on Industrial Electronics, 2001. Proceedings. ISIE 2001. 12-16 June 2001
Pages: 286 - 291 vol.1

D2: US 2003/0088703 A1

Document D1 discloses a description of the control protocol, LnCP (Living network Control Protocol), targeting at low implementation cost networking system in home environment. The protocol is based on multi-master system and uses a peer-to-peer communication model.

According to D1, the protocol assumes single bus therefore the appliances can be attached to the bus anywhere if the power lines are employed as network bus. Home appliances linked via LnCP are controlled and monitored at remote place. Every device communicates with each other in packet unit, which has variable length so that the protocol can deal with the devices having the diverse room of RAM resource. The bytes number of packet header is also variable in order that new function can be added in the future.

In section 2.2, D2 relates to protocol layers which are based on the ISO Open Systems Interconnect (OSI) seven layers network protocol model, especially LnCP layering consists of the Physical Layer, Data Link Layer and Application Layer. Each layer follows the divisions established by the OSI standard for protocol tasks.

Physical Layer is responsible for data encoding and decoding, Data Link Layer (DLL) is divided into MAC (Medium Access Control) layer and Link layer. MAC employs collision avoidance algorithm. Link layer handles reception of packets over the attached medium, address recognition, error detection, packet timing, packet retransmission and detection of the duplicate message. Application Layer is responsible for message generation, message reception, message execution and message fragmentation.

In section 6.1, D1 defines a message as a set of elements that have information to control the communication process and analyze the results of that in the point of master view. Message is divided into two categories according to the type of device who makes a message, request and response messages. Request message includes the command and the arguments to execute it. There are two kinds of response message, ACK and NAK messages. The response messages include the copy of command code, ACK/NAK and return arguments generated after execution of command code. The bytes number of the each argument is fixed definitely to each command code.

Document D2 discloses a method for generating a house code (HC) in a home network based on a living network control protocol (LnCP), in which a HC having a small capacity is generated by using a region separation code and a household separation code and the generated HC is provided to each household. To this end, in the home network generating a HC for dividing each household and providing the generated HC to each household, the method comprises the steps of: generating a portion of the HC as region separation codes for dividing into plural regions; and generating another portion of the HC as household separation codes for providing to each household of the plural regions

According to D2, a data frame is defined, whereby if the data frame is constructed, the network manager transmits the constructed data frame through the power line by the PLC, and the transmitted data frame is received by the modem connected to the digital domestic appliances of each household. The modem which received the data frame extracts a HC from the frame header of the data frame and determines whether the extracted HC is consistent with a HC preset to itself or not. As a result of the determination, if so, the modem transmits the received data frame to the digital domestic appliance connected to itself. The digital domestic appliance extracts the LnCP packet of the body from the received data frame and determines whether a predetermined order is given to itself or not. If the order is given to itself, the digital domestic appliance performs operations by the predetermined order, and if the order is not given to itself, the digital domestic appliance ignores the order.

The present application relates to a home network system, comprising at least two devices, one master device and one slave device, and a network for connecting the devices. Furthermore, a part of a message protocol is defined, comprising a command and an argument in order to launch commands on slave devices. A message is sent from one device to another device by passing upper/lower layer and lower/upper layer of first and second device, respectively.

Further, as another part of the message protocol, a request/response message system is defined, delayed commands and ACK/NAK codes.

However, these features are the same as provided in D1, where commands and arguments are foreseen as well as request/response packages or ACK/NAK codes. D1 further relates to the ISO-OSI layer system which is well known by any person skilled in the art.

Furthermore, most features of the present applications can also be found in D2, differing in that the present application makes use of request/response messages. Although, D2 does not make use of the ISO-OSI layer system, the layering is part of the LnCP, presented in D2.

Both of the cited documents, D1 and D2, are related to the living network control protocol, this cannot be considered as a restriction since it is easily possible to extend to any other network by a person skilled in the art.

Accordingly, all features of the present application can be found in any of the cited documents.

Therefore, claims 1 to 22 are not new and do not include an inventive step.

Industrial applicability is given.
